

Atty. Dkt. No. 594-25578 (WGEC-0058)

IN THE DRAWINGS:

The attached sheet of drawings includes changes to Figure 1. This sheet replaces the original sheet. In Figure 1, a PRIOR ART legend has been added.

Attachment: Replacement Sheet
Annotated Sheet Showing Changes

REMARKS

This is intended as a full and complete response to the Office Action dated August 10, 2005, having a shortened statutory period for response set to expire on November 10, 2005. The drawings have been amended to add a PRIOR ART legend to Figure 1. Claims 15 and 26 have been amended to more clearly recite aspects of the invention. Applicants believe no new matter has been introduced by the amendments presented herein. The amendments have been made in a good faith effort to advance prosecution on the merits. Please reconsider the claims pending in the application for reasons discussed below.

The Examiner objects to Figures 1-8 for lacking a PRIOR ART legend. The Examiner further takes the position that Figure 5 is "exactly identical" to Figure 1 of MODEL-BASED INVERSION OF AMPLITUDE VARIATIONS-WITH-OFF SET DATA USING A GENETIC ALGORITHM by S. Mallick, Geophysics, Vol. 60, No. 4, pages 939-954 (July-August 1995) ("Mallick 1995"). Figure 1 has been amended to include the PRIOR ART legend. With respect to the Examiner's position on Figure 5, Applicants traverse the objection since Figure 5 is not the same as Figure 1 of Mallick 1995. Accordingly, withdrawal of the objection is respectfully requested.

Claim 15 stands rejected under 35 USC 112, second paragraph, for being indefinite. Claim 15 recites "evaluating changes in polarity". The Examiner takes the position that the meaning of polarity is unknown. Claim 15 has been amended to more clearly recite aspects of the invention. Accordingly, withdrawal of the rejection is respectfully requested.

Claims 1-27 stand rejected under 35 USC 102(a) as being anticipated by PRESTACK WAVEFORM INVERSION USING A GENETIC ALGORITHM – THE PRESENT AND THE FUTURE by S. Mallick, CSEG Recorder (June 2001) ("Mallick 2001"). Applicants respectfully traverse this rejection.

Mallick 2001 is not a proper reference under 102(a), since Mallick 2001 was published less than one year prior to the filing date of the above referenced application by S. Mallick, an inventor of the above referenced application. Further, the subject matter of Mallick 2001 is derived from claims 1-27, of which S. Mallick is an inventor.

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Therefore, Mallick 2001 is merely a publication of Mallick's own invention recited in claims 1-27. "One's own invention, whatever the form of disclosure to the public, may not be prior art against oneself, absent a statutory bar." *In re Facius*, 408 F.2d 1396, 161 USPQ 294, 301 (CCPA 1969); see also MPEP 706.02(b), 715.01(c) and 716.10. An affidavit under Rule 132 by S. Mallick is submitted herein to further support Applicants' position. Accordingly, withdrawal of the rejection is respectfully requested.

Claims 1-5 and 7-27 stand rejected under 35 USC 103(a) as being unpatentable over SOME PRACTICAL ASPECTS OF PRESTACK WAVEFORM INVERSION USING A GENETIC ALGORITHM: AN EXAMPLE FROM THE EAST TEXAS WOODBINE GAS SAND by S. Mallick, Geophysics, Vol. 64, No. 2, pages 326-336 (March-April 1999) ("Mallick 1999") in view of US Patent No. 6,694,261 ("Huffman"). Applicants respectfully traverse this rejection.

Mallick 1999 is generally directed to an implementation of a prestack inversion technique using a genetic algorithm. However, Mallick 1999 does not teach or disclose determining the shallow water flow risk using the elastic model by comparing the pressure-wave velocity to the shear-wave velocity, as recited in claim 1. Mallick 1999 also does not teach or disclose determining the shallow water flow risk using the post-stack inverted elastic model to compare the pressure-wave velocity to the shear-wave velocity, as recited in claim 26.

Huffman is generally directed to identifying shallow water flow hazards using marine seismic data. However, Huffman does not teach or disclose determining the shallow water flow risk using the elastic model by comparing the pressure-wave velocity to the shear-wave velocity, as recited in claim 1. Huffman also does not teach or disclose determining the shallow water flow risk using the post-stack inverted elastic model to compare the pressure-wave velocity to the shear-wave velocity, as recited in claim 26.

Neither Mallick 1999 nor Huffman, alone or in combination, teaches or discloses determining the shallow water flow risk using the elastic model by comparing the pressure-wave velocity to the shear-wave velocity, as recited in claim 1, and determining the shallow water flow risk using the post-stack inverted elastic model to compare the pressure-wave velocity to the shear-wave velocity, as recited in claim 26.

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Furthermore, there is no suggestion discerned in Mallick 1999 or Huffman of modifying the devices or methods disclosed therein in the direction of claims 1 or 26, nor is there any suggestion of the desirability of such modifications. The absence of such a suggestion to combine the references is dispositive in an obviousness determination. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1579 (Fed. Cir. 1997). Therefore, claims 1 and 26 are patentable over Mallick 1999 in view of Huffman. Claims 2-5, 7-25 and 27 are also patentable over Mallick 1999 in view of Huffman since they depend from claims 1 and 26, respectively.

Claim 6 stands rejected under 35 USC 103(a) as being unpatentable over Mallick 1999 in view of Huffman and KIRCHHOFF IMAGING AS A TOOL FOR AVO/AVA ANALYSIS by Tygel et al., The Leading Edge (August 1999) ("Tygel"). Applicants respectfully traverse this rejection.

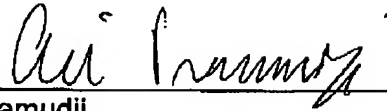
Neither Mallick 1999 nor Huffman nor Tygel, alone or in combination, teaches or discloses determining the shallow water flow risk using the elastic model by comparing the pressure-wave velocity to the shear-wave velocity, as recited in claim 1. Furthermore, there is no suggestion discerned in Mallick 1999, Huffman or Tygel of modifying the devices or methods disclosed therein in the direction of claim 1, nor is there any suggestion of the desirability of such modifications. Since claim 6 depends from claim 1 and since neither Mallick 1999 nor Huffman nor Tygel, alone or in combination, teaches, discloses or suggests all the limitations of claim 1, claim 6 is therefore also patentable over Mallick 1999, Huffman and Tygel. Accordingly, withdrawal of the rejection is respectfully requested.

In conclusion, the references cited by the Examiner, neither alone nor in combination, teach, show, or suggest the claimed invention. Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

The prior art made of record is noted. However, it is believed that the secondary references are no more pertinent to the Applicants' disclosure than the primary references cited in the office action. Therefore, it is believed that a detailed discussion of the secondary references is not deemed necessary for a full and complete response to this office action. Accordingly, allowance of the claims is respectfully requested.

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Respectfully submitted,



Ari Pramudji
Registration No. 45,022
Attorney at Law
14027 Memorial Drive, Suite 185
Houston, Texas 77079-6895
Telephone: (713) 468-4600
Facsimile: (734) 687-6228
Attorney for Applicants

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Annotated Marked-up Drawing
Serial No. 10/016,437

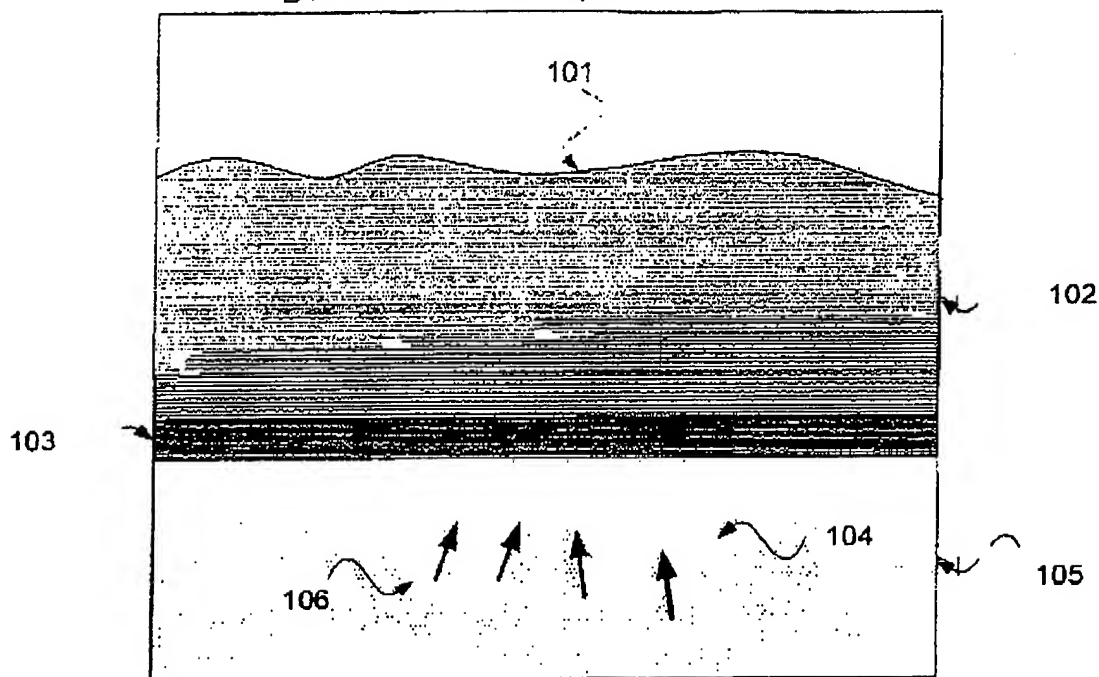


FIG. 1

(PRIOR ART)

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